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Who may operate on acute aortic dissections? The squaring of the circle

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In the somewhat provocative article entitled 'Impact of surgical experience on outcome in surgery of acute type A aortic dissection' published in the present issue of the Journal, Lenos *et al.* compare, based on their experience, the outcomes of patients either operated on by 'aortic surgeons' or 'non-aortic surgeons' [1]. The reported data show a large difference between both groups and clearly demonstrate that patients operated on by surgeons with a large experience in aortic surgery have a much better immediate survival rate than patients operated on by surgeons without such an experience, even though they are experienced cardiac surgeons.

Obviously, those results lead the reader to share the authors' conclusion and to certainly agree with their statement: 'Special experience in aortic surgery does help in choosing an optimal operative strategy and to perform it properly, and therefore, the surgeon's experience plays a decisive role in outcome.' [1].

Because of the severe patho-anatomical damages induced in the vascular network and, often enough, in the main organs and because of the highly variable and unstable clinical condition of the patients, surgery of acute type A dissection represents one of the most, if not the most, difficult challenges in cardio-vascular surgery. It would therefore be logical that colleagues best educated and experienced in that matter carry out such strategically and technically demanding procedures.

Yet, this is not what happens, not only in rare and sporadic cases but, apparently, in a large proportion of cases.

Many reasons explain this paradox:

- No individual is born an 'experienced aortic surgeon'. In whatever specialty or sub-specialty, all surgeons gain their training and increase their experience progressively by operating on more and, also more complex, patients. If they have never operated on patients before being 'experienced', they would never have gotten 'experience' at all.
- Being an 'experienced aortic' surgeon does not mean being an 'experienced surgeon in acute dissection'. Even in very active departments, the average number of acute type A dissections does not exceed 20–25 cases per year (162 in 11 years, in the present report). If those cases are operated on by, let us say, 4–5 surgeons, this means that every single surgeon operates on a maximum of 5 cases a year.
- 'Experienced aortic surgeons' are not numerous and cannot be found in every department of cardiac surgery. Nevertheless, it

has been largely demonstrated for decades that acute type A dissections represent an absolute emergency and should be operated on as soon as possible. This means that, in most departments with no 'experienced aortic surgeons', the patients, especially when in severe condition, have to be operated on by the cardiac surgeon on call.

To overcome this problem, it is proposed that 'patient-centred care in referral aortic centres with surgery performed by specialized teams should be striven for to improve surgical results in acute aortic dissection surgery.' [1] Although desirable, this seems somewhat unrealistic. It might be possible in large urban areas where several centres of cardiac surgery co-exist and where the transfers would be rapidly organized and fast. But what about the countries or isolated areas where the distances between centres are important and where the transfers would take hours. It would likely result in higher preoperative mortality instead of high surgical mortality.

Even in active departments where there are 'aortic surgeons', those remain rather few (1–3, perhaps). From a practical standpoint, how can those few individuals share all the calls for aortic emergencies and dissections, all yearlong, including weekends, holidays etc.? Let alone the fact that, in many departments, the most 'experienced' surgeons are the oldest ones and/or the ones in the highest hierarchic position and, thus, the least prone to be on call. In this regard, it would have been quite interesting that, in addition to studying the 'category' of the surgeon, the authors had analysed the circumstances of surgery for each group (day or night, weekend or not, delay between the procedure and the onset of symptoms etc.) [2].

The present report raises another important question, namely, the homogeneity of surgery within a given surgical department. The authors indeed leave the reader with the feeling that, in this institution, every surgeon operates an acute dissection according to his own strategy, standards and technique. In this regard, statements such as 'groups also differentiated considerably in regard to cannulation and perfusion management, which might play a decisive role in surgical outcome' are somewhat surprising.

It is stated that 'Surgical results in surgery of acute type A aortic dissection remain burdened with considerable mortality and morbidity and seem to not have improved dramatically over the last decades'. This is not quite true. The results of surgery of acute

dissection have dramatically improved in the last 2 decades and many centres presently report on large experiences with a hospital mortality of <10% [3–5]. Therefore, the discrepancy between the results obtained by the two groups of surgeons in the present study (4 vs 21% hospital mortality) is rather intriguing, especially when considering that each ‘non-aortic’ surgeon has an experience of more than 2000 cases of cardiac surgery.

Moreover, the authors state ‘However, standardizing surgical methods for the treatment of acute aortic dissection can hardly be expected because there is a lack of evidence-based assessments, and a randomization seems to be impossible’. We cannot agree with this.

Some major standards and principles have been developed: antegrade perfusion of the aorta through the cannulation of the supra-aortic vessels or the proximal aorta [6]; systematic open distal repair; antegrade selective brain perfusion [7, 8]; systematic resection of the proximal intimal tear; extended resection in Marfan patients [9] and so on. It is not necessary to have randomized studies to become aware of those indisputable progresses [10].

It seems therefore that the main duty of the ‘experienced aortic surgeons’ could be, through the analysis of the results, surgical staff meetings, direct participation in the procedures whenever possible, to make those principles mandatory (or as much frequently used as possible) in order for every cardiac surgeon of the team to fulfil the minimal criteria of treating the patients with a reasonable and more homogeneous risk.

This does not seem to be an unreachable task.

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